

Doctor Matzger, if one will be careful in determining the initial dose when treatment is commenced these may be avoided. Also if one is acquainted with the reactions that may occur from treatment with pollen antigen he can usually combat them very readily with the administration of adrenalin chlorid in doses 0.5 cubic centimeters to 1 cubic centimeter. It has never been necessary in our own practice to use strophanthin. Another point is that these reactions of a serious nature may be avoided by insisting that the patient remain in the office for at least twenty minutes after the injection of the pollen antigen. Should any reactions occur of a severe nature they will occur within that period of time and, as mentioned above, can be combated by the means suggested. The commonest reactions that occur following the treatment of hay fever with pollen antigen are those of a marked redness and swelling about the site of injection, or hay fever, or urticaria immediately following the injection. These reactions may occur despite any attempt made to determine dosage. They may occur early in the course of treatment, or late when high concentration of antigen is used, but in our own experience we have found that reactions do not cause any harmful effect other than the discomfort and symptoms, such as hay fever, urticaria or asthma, that may result from them. They are only temporary, and we have found in a large number of cases studied that usually reactions such as these go hand in hand with good results.

The procedure suggested by Doctor Matzger for determining initial dosage in treatment of hay fever is not a new one, and has been described—as stated by him—by Cooke and Walker, but insofar as we know at the present time there is no other method by which quantitative test of the patient's sensitivity can be made, and therefore it is suggested that all who are treating hay fever with pollen antigen employ this method, as it is the best we have at hand at this time.

In regard to the treatment of patients who give reactions: It is advisable, as suggested by Doctor Matzger, and others, that the dose be repeated at the following visit instead of increasing the same because of the possibility of severe constitutional reactions that might ensue following an increase in the dose of pollen antigen. One should not hesitate to repeat this dose as many times as the patient has reactions; in fact the patient will appreciate your doing so. However, if the period between the anticipated seasons is short in view of the number of treatments planned for the patient, increase the frequency of treatment so that the course may be completed by the time the season begins.

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ALBERT H. ROWE, M. D. (242 Moss Avenue, Oakland).—Doctor Matzger's emphasis on the necessity of a thorough understanding of pollen dosage by all physicians who assume the responsibility of pollen therapy is most important. To obtain results strong extracts must be used, but the doses of these extracts should be adjusted to the sensitiveness of each patient to the specific antigen. A printed schedule, such as is furnished by commercial houses, cannot be blindly followed. The initial dose must be determined by a skin-testing, as outlined by Doctor Matzger. I have found that .025 or .05 cubic centimeters of the dilution, which just fails to give a three-hour reaction by the scratch method, is safe in the average patient. Certain very sensitive patients demand a solution of 1 to 25,000 or even 1 to 100,000. As the treatment progresses, the dose must be determined entirely by the patient's local reaction. Doses must be repeated if the reaction is larger than three or four inches and constitutional reactions must be guarded against with care. Patients who are sensitive should be told about such constitutional reactions and instructed to return to the office immediately if any general itching,

coughing, or the slightest asthma occurs. Fresh adrenalin 1 to 1000 must be at hand and liberal doses must be given every five to fifteen minutes if general reaction develop.

There is no therapeutic measure which requires more care than pollen therapy. It is safe, as evidenced by the extensive use of it by specialists for several years. It is an agent for the greatest good if used correctly, but if used without due care and experience severe and even fatal results may occur. I have not found the necessity of strophanthin in any general reaction. Those which have occurred in my practice have been rapidly controlled by adrenalin because the patients are all instructed about returning to the office.

Physicians who wish to use pollen therapy should do so because of the tremendous relief given, but their understanding of proper dosage is absolutely necessary if the patient is to be given the result he deserves and is to be protected against serious reactions.

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DOCTOR MATZGER (Closing).—I thank Doctor Rowe for further emphasizing the necessity of individually dosing each patient's treatment. As Doctor Piness indicated, Doctor Cooke and Doctor Walker's technique of determining individual sensitiveness should be thoroughly understood and borne in mind by all doctors attempting to treat diseases of human hypersensitiveness.

We can look forward to the future with the hope that biological standardization of pollen extract activity may be determined which would enable one accurately to determine the proper dosage.

## THE LURE OF MEDICAL HISTORY

### THE EVOLUTION OF MELOTHERAPY

#### MUSIC IN THE CURE OF DISEASE

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THE term "melotherapy," I believe, was coined by Dr. Mousson Launage in 1924 to signify the effect of music on the progress or cure of disease. The word is not found in the general or medical dictionaries. It may be accepted as a perfect etymological creation to the content even of the ultragrammarian.

It is derived from melos, of the same root as melody, and of therapy. Melos, according to Plato, was composed of three parts: of words, harmony, and rhythm (Rep. 368D); also it means the music to which a song is set, an air, melody, melas: tune. Therapeia, as defined by Liddell and Scott, denotes service done to the sick, tending; remedy, cure. Therefore, we may say, melotherapy means the treatment of disease by music as a therapeutic agent. A new term for an old therapy.

Sound is the principal medium by which most of the higher animals both express and excite emotion; it is used as a warning to effect self-preservation, precedes language, and is an instant, instinctive, prehuman phenomenon.

Darwin sufficiently studied the biological basis of tone and established that the strong appeal of sound to emotions is founded in the life history of the higher animals.

With such intimately interwoven existence and deeply rooted origin of the significance of sound and life, the genesis and growth of both music and medicine and their association is lost in the adumbrated past, wherein only a single but bright beam of crystallized tradition has survived and passed on summated in Orpheus.

#### MUSIC AND MEDICINE IN MYTHOLOGY

The Greeks ascribed the invention of the lyre to their Hermes. The latter after inventing the lyre gave it to Apollo, and received from him in exchange the "golden three-leaf rod," the giver of wealth and riches, the Caduceus.

The relation of music and medicine is not new. Apollo is god of both. We may consider them as sister arts. Apollo was the father and the leader of the Muses, hence called Musagetes. Apollo in Homer is the god of archery, prophecy, and music; to his arrows were ascribed all sudden deaths. By his shafts, Apollo was the god of pestilence, which he removed when duly propitiated. He is named in mythology as the father of Aesculapius, god of healing. Cheiron, the centaur, was the teacher of Aesculapius in medicine. With music, Aesculapius procured sleep, relieved pain, and to the tune of epodes compounded medicines. Machaon and Podalirius, sons of Aesculapius, and the other hero-physicians of the times and later ages, applied medicines and prepared the same while reciting and singing certain formulae.

Orpheus is presented to us as a poet, a rhapsodist, priest, theologian, magician, physician, apostle of civilization, prophet, philosopher and benefactor of humanity. Traditions relating to him are very obscure. His native country was Thrace; here we see the Thracian civilization and culture descending southerly toward Greece. His time is placed not long before the Trojan War, or at the period of the Argonaut expedition: twelve to thirteen centuries B. C. He is the son of Apollo. He was one of the Argonauts; the enchanting tones of his lyre moved the Argo smoothly into the water. His skill to strike that instrument was fabled and many legends have been created around it.

It is said to have been such as to move the very trees and rocks, and the beasts of the forest assembled round him as he touched its chords, and to so charm the Infernal Powers as to stay their immutable functions and torments.

He had for his wife a nymph named Eurydice, who died from the bite of a serpent. Disconsolate at the death of his wife, he determined to descend to the Lower World and endeavor to mollify its rulers and obtain permission for his beloved Eurydice to return to the Region of the Light. Armed only with his "golden shell," he gained admission to the palace of Pluto. This myth has been the subject of many poems, those of Virgil and Ovid giving the most graphic conception. As Orpheus pleaded his case and touched

the strings to his words, the bloodless spirits wept. Tantalus did no longer try to catch at the retreating water, and the wheel of Ixion stood still, as though in amazement; the vultures did not tear the liver and entrails of Tityus; and the granddaughters of Belus paused at their urns; Sisyphus did seat himself on the stone instead of rolling it. All the shades at endless tasks had a rest and relief. The story is, that then, for the first time the cheeks of the Eumenides, overcome by his music, were wet with tears; nor could the royal consort, nor he who rules the Infernal Regions endure to deny him his request. Pluto and Proserpina granted the request, and called for Eurydice. She was among the shades newly arrived, and she advanced with a slow pace by reason of her wound.\*

Amphion, a Theban prince, it is said, built the walls of Thebes, causing the stones to take their respective places in obedience to the tones of his golden lyre.

Achilles, to relax his anger, picks up his lyre and plays upon it.

Ulysses, wounded in Parnassus by the wild boar, with music stopped the bleeding, pain and suffering, and obtained a quick and perfect healing with a very small scar.

#### MUSIC IN HISTORY

Pythagoras regards music as an admirable remedy for body and mental ailments.

Democritus states that "in many diseases the sounds of flute have been a sovereign remedy."

Aulus Gellus relates: "It is a belief widely scattered that a man afflicted with an attack of sciatica feels the intensity of his illness sensibly diminish if anyone playing close to him elicits soft and melodious sounds from a flute."

Celsus recommends flutes, cymbals, trumpets, and other noisy instruments for the demented.

Theophrastus cured a snake bite using music.

According to the iatrohistorian Hecker, the effect of music as a healing agent on the dancing mania of the Middle Ages was very efficacious. The governments of the afflicted countries learned that music was a specific remedy in these epidemics and actually hired musicians to play before the populace in order to dispel the attacks.

Spencer, Diderot, Rabelais, and the late Sir Frederick Mott, all acknowledged the force and therapeutic value of music.

Music, with the present-day means of broadcasting, reappears in her old association with medicine, serving as a useful auxiliary at the bedside of the sick, convalescent, and rehabilitating.

Dr. Robert Schauffler, American, has suggested a veritable musical pharmacopeia.

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\* Ovid, x, 1-147. Adapted from the translation of H. T. Riley.